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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,577	08/24/2001	Shigeo Mikoshiba	Q65912	8851
7590 12/29/2004			EXAMINER	
SUGHRUE MION ZINN MACPEAK & SEAS, PLLC			COLON, GERMAN	
2100 Pennsylvania Avenue, NW			ART UNIT	
Washington, DC 20037-3213			PAPER NUMBER	
			2879	

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/935,577

Applicant(s)

MIKOSHIBA ET AL.

Examiner

German Colón

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

1. The Amendment, filed on October 8, 2004, has been entered and acknowledged by the Examiner.

### ***Drawings***

2. The drawings were received on October 8, 2004. These drawings are acceptable.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 7 are rejected under 35 U.S.C. 102(e) as being anticipated by Murata et al. (US 6,611,099).

Regarding claim 1, Murata discloses a vacuum ultraviolet radiation excited light-emitting device comprising a discharge space (see at least Figs. 1-2B) filled with a rare gas between a front faceplate 31 and a rear faceplate 11, and a fluorescent material 41 layer provided on the front faceplate, the fluorescent material having a thickness of not more than about 7  $\mu\text{m}$  (see Col. 7, lines 65-66).

Referring to claim 7, Murata discloses the fluorescent material layer containing a fluorescent material having an average primary particle diameter of not more than about 1  $\mu\text{m}$  (see Col. 7, lines 58-64).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2, 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsawa et al. (US 5,939,826) in view of Murata et al. (US 6,611,099).

Regarding claim 1, Ohsawa discloses a vacuum ultraviolet radiation excited light-emitting device comprising a discharge space S filled with a rare gas between a front faceplate 3 and a rear faceplate 1, and a fluorescent material 7 layer provided on the front faceplate. Ohsawa teaches the thickness of the fluorescent material on the front faceplate to be optimized to produce a thin layer which avoids attenuation of light (see Col. 6, lines 7-10 and 20-25), but is silent regarding the limitation of “the thickness being less than 7  $\mu\text{m}$ ”.

However, in the same field of endeavor, Murata discloses a PDP comprising a fluorescent material having a thickness of less than 7  $\mu\text{m}$  and teaches said thickness to be suitable for reducing the voltage applied to the fluorescent material, which minimizes the discharge start voltage of each discharge space, facilitating driving control for displaying an image (see Col. 15, lines 44-55, and Col. 7, lines 65-66). Thus, it would have been obvious to one of ordinary skill

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in the art at the time the invention was made to provide the fluorescent material with a thickness of 7  $\mu\text{m}$  with the purpose of reducing the voltage applied to the fluorescent material, which minimizes the discharge start voltage of each discharge space, facilitating driving control for displaying an image.

Regarding claim 2, Ohsawa-Murata discloses the light-emitting device further comprising a fluorescent material on the rear faceplate.

Referring to claim 5, Ohsawa-Murata discloses the light-emitting device being a PDP.

Referring to claim 6, Ohsawa-Murata discloses the fluorescent material on the rear faceplate having a thickness of not more than about 20  $\mu\text{m}$ . Same reasons for the thickness value stated in claim 1 apply.

Referring to claim 7, Ohsawa-Murata discloses the fluorescent material layer containing a fluorescent material having an average primary particle diameter of not more than about 1  $\mu\text{m}$  (see '099, Col. 3, lines 31-35).

7. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anandan et al. (US 5,708,324) in view of Murata et al. (US 6,611,099).

Regarding claim 1, Anandan discloses a vacuum ultraviolet radiation excited light-emitting device comprising a discharge space 4 filled with a rare gas between a front faceplate 1 and a rear faceplate 2, and a fluorescent material 6 layer provided on the front faceplate. Anandan teaches the thickness of the fluorescent material on the front faceplate to be optimized to produce a thin layer which avoids attenuation of light (see Col. 2, lines 30-38), but is silent regarding the limitation of the thickness being less than 7  $\mu\text{m}$ ".

However, in the same field of endeavor, Murata discloses a PDP comprising a fluorescent material having a thickness of less than 7  $\mu\text{m}$  and teaches said thickness to be suitable for reducing the voltage applied to the fluorescent material, which minimizes the discharge start voltage of each discharge space, facilitating driving control for displaying an image (see Col. 15, lines 44-55, and Col. 7, lines 65-66). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the fluorescent material with a thickness of 7  $\mu\text{m}$  with the purpose of reducing the voltage applied to the fluorescent material, which minimizes the discharge start voltage of each discharge space, facilitating driving control for displaying an image.

Regarding claim 2, Anandan-Murata discloses the light-emitting device further comprising a fluorescent material on the rear faceplate.

In regard to claim 3, Anandan discloses the light-emitting device being a rare gas lamp.

In regards to claim 4, Anandan-Murata discloses the fluorescent material layer on the rear faceplate having a thickness of not less than about 30  $\mu\text{m}$ . The Examiner notes that Anandan teaches the thickness of the fluorescent material on the rear faceplate to be in a range from 2 to 10 times the thickness of the fluorescent material on the front faceplate (see Col. 2, lines 53-57).

### ***Response to Arguments***

8. Applicant's arguments filed October 8, 2004 have been fully considered but they are not persuasive.

i. Applicant argues that Murata fails to teach the fluorescent material layer being provided on the front faceplate rather than the rear faceplate.

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This is not persuasive. The Examiner notes that the terms “front” and “rear” are matters of perspective. It is proper to ask with respect to what point in space a faceplate is either in front of or behind. The claims provide no structural limitations establishing which of the faceplates is a front or a rear one. Rather, the descriptions “front” and “rear”, like the descriptions “first” and “second”, only serves to identify the requirement of two separate structures.

ii. Applicant argues that Ohsawa teaches away from the claimed invention by teaching that the face panel coated fully with the phosphor cannot be practically used, and cites Col. 9, lines 32-36.

This is not persuasive. Column 9, lines 32-36 recite “There is no problem if the light output face (face panel) *can* be coated fully with the phosphor. However, the current face panel cannot be coated enough to use the ultraviolet ray effectively in connection with the light output needed to display.”

As clearly stated in the aforementioned citation, Ohsawa teaches a way of carrying out the invention, not away. First, Ohsawa is supporting his position on the need for controlling the thickness of a phosphor by providing a thin fluorescent layer which avoids attenuation of light (see Col. 6, lines 7-10 and 20-25). Second, even if Applicant’s allegation of Ohsawa teaching not to fully coat the faceplate was accurate, the claim language only requires a phosphor layer disposed on the faceplate and recites no limitations about said layer being continuous or covering *all* the area of the faceplate.

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iii. Applicant argues that Anandan fails to teach the phosphor having a thickness of not more than about 7  $\mu\text{m}$  and that even if Anandan were combined with Murata, one of ordinary skill in the art would not have had a reasonable expectation of achieving the claimed invention.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Anandan teaches the thickness of the fluorescent material on the front faceplate to be optimized to produce a thin layer which avoids attenuation of light, but is silent regarding the specific thickness. However, Murata teaches a thickness of 7  $\mu\text{m}$  to be suitable for reducing the voltage applied to the fluorescent material, which minimizes the discharge start voltage of each discharge space, facilitating driving control for displaying an image. Accordingly, one of ordinary skill in the art would entertain the idea of providing a thickness of about 7  $\mu\text{m}$  to the light-emitting device of Anandan, and would have had a reasonable expectation of achieving the claimed invention.

For the reasons stated above, the rejection of claims 1-7 is deemed proper.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after



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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 571-272-2451. The examiner can normally be reached on Monday thru Thursday, from 8:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JC  
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Karabi Guharay